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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/534,272

05/09/2005

Satoshi Itoh

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MCDERMOTT WILL & EMERY LLP
600 13TH STREET, N.W.
WASHINGTON, DC 20005-3096

EXAMINER

ENSEY, BRIAN

ART UNIT

PAPER NUMBER

2615

MAIL DATE

DELIVERY MODE

03/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/534,272	ITOH ET AL.	
	Examiner	Art Unit	
	Brian Ensey	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 May 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/9/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

Figure 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to because page 5 is merely a parts list all of which have been disclosed in the specification. Deletion of page 5 is recommended. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: Applicant should be consistent in naming element 30. See page 10, line 21: "Front surface 30" and "second diaphragm 30".

Appropriate correction is required. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Flat Panel Speaker System With A Coated Diaphragm.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3 and 6-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto Japanese Utility Model Laid-Open No. H1-159487 in view of Ishigaki et al. U.S. Patent No. 6,740,202.

Regarding claim 1, Matsumoto discloses a speaker system comprising: a frame (1,2) coupled to a magnetic circuit (magnetic circuit is inherently coupled to the frame of the speaker); a first diaphragm (diaphragm of speaker 2) fixed on a outer periphery of the frame (inherent in the construction of speaker 2); a voice coil one end of which is fixed to the first diaphragm and an other end of which is fit within a magnetic gap of the magnetic circuit (inherent in the construction of speaker 2); a panel (4) attached to the frame; a room (Space between panel 4 and second diaphragm 5) surrounded by the panel to which a second diaphragm (5) is attached; and

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the second diaphragm acoustically coupled with the room surrounded by the panel (See Figs. 1 and 2 and abstract translation). Matsumoto does not expressly disclose the second diaphragm has a coating layer on a surface. Matsumoto does teach the second diaphragm comprises characters, illustrations, etc. thereon. Further, the use of coatings on diaphragms is well known in the art and Ishigaki teaches coating a speaker diaphragm to make the diaphragm highly rigid with light weight and incombustible or flame-retardant (See col. 1, lines 61-64 and col. 2, lines 5-21). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the coating of Ishigaki to the diaphragm of Matsumoto for improved rigidity and light weight.

Regarding claim 3, the combination of Matsumoto in view of Ishigaki further discloses the coating layer is formed of heat-resistant material (Ceramic film. See Ishigaki col. 2, lines 16-21).

Regarding claim 6, the combination of Matsumoto in view of Ishigaki further discloses the first diaphragm (diaphragm of speaker 2) is smaller than the second diaphragm (5) (See Matsumoto Fig. 1).

Regarding claim 7, the combination of Matsumoto in view of Ishigaki further discloses the second diaphragm (5) is a transparent film (See Matsumoto abstract translation).

Regarding claim 8, the combination of Matsumoto in view of Ishigaki further discloses the panel (4) is made of a transparent material (See Matsumoto abstract translation).

Regarding claim 9, the combination of Matsumoto in view of Ishigaki further discloses the second diaphragm (5) is a transparent film, and the panel (4) is made of a transparent material (See Matsumoto abstract translation).

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Regarding claims 10 and 11, the combination of Matsumoto in view of Ishigaki further discloses the second diaphragm has microscopic irregularity on a surface confronting the panel and the panel has microscopic irregularity on a surface confronting the second diaphragm (See Matsumoto abstract. The panel and diaphragms are made of polycarbonate or acrylic resins, both of which form a semi-porous surface and therefore inherently contain microscopic irregularities. Further, all materials comprise a certain measure of microscopic irregularities).

Regarding claim 12, the combination of Matsumoto in view of Ishigaki further discloses the frame forms a first room surrounding the first diaphragm, the second diaphragm and the panel form a second room, and the first room and the second room are connected through a hole (4a) (See Matsumoto Figs. 1 and 2 and abstract translation).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Matsumoto in view of Ishigaki as applied to claim 1 above, and further in view of Horie JP Publication No. 62133067 A.

Regarding claim 2, the combination of Matsumoto in view of Ishigaki discloses a speaker system as claimed. The combination of Matsumoto in view of Ishigaki does not expressly disclose the coating layer is formed of scratch-resistant material. However, Horie teaches the use of a diamond coating on a loudspeaker diaphragm (See translation abstract). Hence, since diamond is one of the hardest substances known it would provide excellent protection from scratching. Therefore, It would have been obvious to one of ordinary skill in the art at the time of

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the invention to replace the coating of the combination of Matsumoto in view of Ishigaki with the diamond coating of Horie to provide a superior scratch resistant diaphragm.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Matsumoto in view of Ishigaki as applied to claim 1 above, and further in view of Thelen U.S. Patent No. 3,185,020.

Regarding claim 4, the combination of Matsumoto in view of Ishigaki discloses a speaker system as claimed. The combination of Matsumoto in view of Ishigaki does not expressly disclose the coating layer is formed of antireflection material. However, the use of antireflection coatings on transparent display panels is well known in the art and Thelen teaches a multilayered antireflection coating for use on displays to reduce and eliminated unwanted reflections in display systems (See col. 1, lines 40-42 and lines 54-62). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to use the coating of Thelen on the transparent second display diaphragm of the combination of Matsumoto in view of Ishigaki to allow clearing viewing without unwanted reflections.

Regarding claim 5, the combination of Matsumoto in view of Ishigaki discloses a speaker system as claimed. The combination of Matsumoto in view of Ishigaki does not expressly disclose at least one surface of the second diaphragm has single-layered, or multi-layered coating material formed of any one of scratch-resistant, heat-resistant, and antireflection materials. However, the use of antireflection coatings on transparent display panels is well known in the art and Thelen teaches a multilayered antireflection coating for use on displays to reduce and

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eliminated unwanted reflections in display systems (See col. 1, lines 40-42 and lines 54-62).

Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to use the coating of Thelen on the transparent second display diaphragm of the combination of Matsumoto in view of Ishigaki to allow clearing viewing without unwanted reflections.

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Matsumoto in view of Ishigaki as applied to claim 1 above, and further in view of Konishi et al. U.S. Patent No. 7,020,302.

Regarding claims 13 and 14, the combination of Matsumoto in view of Ishigaki discloses a speaker system as claimed. The combination of Matsumoto in view of Ishigaki does not expressly a display section, wherein, the display section is attached under the speaker system and the display section can be seen through the second diaphragm or the panel and an operating section, wherein, a user can operate the operating section while watching the display section through the second diaphragm or the panel. However, the use of displays and operating sections under a second transparent diaphragm is well known in the art and Konishi teaches a portable telephone (51) comprising a second transparent diaphragm (30) with a display section (41) and operating section (42) mounted underneath the diaphragm for overall size reduction of the electronic unit (See Fig. 4 and col. 4, line 55 to col. 5, line 9). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the display and operating units as taught by Konishi in the coated speaker system of the combination of

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Matsumoto in view of Ishigaki for a smaller electronic unit with improved visibility and durability.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Ensey whose telephone number is 571-272-7496. The examiner can normally be reached on Monday - Friday 6:00 AM - 2:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, Va. 22313-1450

Or faxed to:

(571) 273-8300, for formal communications intended for entry and for informal or draft communications, please label "PROPOSED" or "DRAFT".
Hand-delivered responses should be brought to:

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Arlington, VA 22314

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian Ensey/
Primary Examiner, Art Unit 2615
March 10, 2008